

**PATENT**  
Attorney Docket No. ZCO-100  
(120573/158152)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANTS:      Bredt *et al.*      CONF. NO.:      4783  
SERIAL NO.:      10/848,831      GROUP NO.:      1773  
FILING DATE:      May 19, 2004      EXAMINER:      Sheeba Ahmed  
TITLE:      THERMOPLASTIC POWDER MATERIAL SYSTEM FOR  
                 APPEARANCE MODELS FROM 3D PRINTING SYSTEMS

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**COMMENTS ACCOMPANYING PRE-APPEAL BRIEF REQUEST FOR REVIEW**

This paper is submitted along with a Pre-Appeal Brief Request for Review in accordance with the Official Gazette Notice dated July 12, 2005, and a Notice of Appeal in response to the Office action mailed by the U.S. Patent and Trademark Office on April 16, 2008, and the Advisory Action mailed July 7, 2008. The Commissioner is authorized to charge Deposit Account No. 07-1700 \$630.00 for the fee for filing the Notice of Appeal and for a one-month extension of time; a petition for a one-month extension of time is submitted herewith. Applicants believe that no additional fee is required for this submission to be entered. However, please consider this a conditional petition for the proper extension, if one is required, and a conditional authorization to charge any related extension fee, or any other fees, necessary for entry of this submission to Deposit Account No. 07-1700.

Applicants' **Remarks** begin on page 2 of this paper.

### REMARKS

The Examiner has improperly rejected independent claim 82 under 35 U.S.C. § 102(b) as being unpatentable over U.S. Patent No. 6,780,369 to Liu et al. (“Liu”). The Examiner has also improperly rejected independent claims 76, 78, 80, and 83 under 35 U.S.C. § 102(b) as being unpatentable over U.S. Patent No. 4,649,077 to Lauchenauer (“Lauchenauer”). Finally, the Examiner has improperly rejected independent claim 1 over U.S. Patent No. 4,061,825 to Counsell et al. (“Counsell”). The Examiner’s continued refusal to acknowledge the recitation in the method claims of first applying a fluid to a film of particles and then applying an energy means to induce the fluid to solidify, as well as of applying a fluid to loose and free-flowing particulate mixture constitute clear factual deficiencies in the rejections of the claims. Moreover, the Examiner erred by disregarding the recited requirements of the independent article claim of a loose and free-flowing particulate mixture, as well as of the various thermoplastic and adhesive materials.

In the present case, the Examiner failed to cite references that teach the limitations of the claims, and has not met even the basic requirements of § 102(b). As a result, the Examiner has not established anticipation of the claimed subject matter.

The Examiner erred when she ignored claim limitations in her rejection of independent powder composition claim 1 in view of Counsell. Counsell discloses a water-activatable tape including a substrate impregnated or coated with a water-reactive cementitious composition that includes a water-sensitive additive. In a dry state of the tape, a binder binds dry cement particles to the tape. *See abstract and column 1, lines 40 – 65.* Counsell does not teach or suggest a loose and free-flowing particulate mixture including a thermoplastic particulate material and an adhesive particulate material, as required by claim 1. Rather, Counsell discloses a cementitious composition that is applied to a tape by immersing the tape in a non-aqueous slurry. *See column 2, lines 29 – 33.* Such a composition is not and cannot be the claimed loose and free-flowing particulate mixture; moreover, the compositions disclosed by Counsell do not contain the thermoplastic and adhesive particulate materials recited in claim 1.

The Examiner also ignored the claim limitation of applying a fluid to a loose and free-flowing particulate material when she asserted that Lauchenauer anticipates the instant claims. Lauchenauer discloses a heat-activatable adhesive, i.e., a sheet, formed from at least two

flowable components. A component may be activated by heat and/or pressure. *See abstract.* When the component is activated, it is adhered to the heat-activatable sheet and is no longer flowable. The Examiner, therefore, erred in her use of this reference against independent method claims 76, 78, and 80, that each recite applying fluid to a loose and free-flowing particulate material. Similarly, the Examiner also erred in her rejection of independent article claim 83 in view of Lauchenauer, as Lauchenauer does not disclose an article including the product of a loose and free-flowing particulate mixture and a fluid, as required by claim 83.

Finally, in her rejection of claim 82 in view of Liu, the Examiner made yet another error by ignoring the Applicants' claim limitation of (i) applying a non-aqueous fluid to a film of particles to print a layer and (ii) applying an energy source to the printed layer to induce the non-aqueous fluid to solidify, as required by claim 82. Liu discloses applying an energy source to either (i) cure or harden a powder including a resin composition or (ii) to fuse a material to form a liquid that is subsequently cooled to become a solid. *See column 7, lines 8 -17.* The Examiner herself characterizes Liu as first creating a binder fluid by applying energy means and then solidifying the binder material by cooling the temperature. In stark contrast, claim 82 requires first applying a fluid to a film of particles and then applying an energy means to induce the fluid to solidify.

In summary, the Examiner has ignored the recited claim limitations that describe novel and inventive aspects of three-dimensional printing, and thereby erred in rejecting the instant claims by failing to provide references that, alone or in combination, disclose all of the limitations of the claims.

**CONCLUSION**

We respectfully submit that, as set forth in the foregoing remarks, there are clear errors in the Examiner's rejections.

Respectfully submitted,

Date: July 23, 2008  
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PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional) ZCO-100									
		Application Number 10/848,831-Conf. #4783	Filed May 19, 2004								
		First Named Inventor James F. Bredt									
		Art Unit 1794	Examiner S. Ahmed								
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s).            Note: No more than five (5) pages may be provided.</p>											
<p>I am the</p> <table> <tr> <td><input type="checkbox"/> applicant /inventor.</td> <td>/Natasha Us/ Signature</td> </tr> <tr> <td><input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)</td> <td>Natasha Us Typed or printed name</td> </tr> <tr> <td><input checked="" type="checkbox"/> attorney or agent of record. Registration number <u>44,381</u></td> <td>(617) 570-1806 Telephone number</td> </tr> <tr> <td><input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34. _____</td> <td>July 23, 2008 Date</td> </tr> </table>				<input type="checkbox"/> applicant /inventor.	/Natasha Us/ Signature	<input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)	Natasha Us Typed or printed name	<input checked="" type="checkbox"/> attorney or agent of record. Registration number <u>44,381</u>	(617) 570-1806 Telephone number	<input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34. _____	July 23, 2008 Date
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<p>NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.            Submit multiple forms if more than one signature is required, see below*.</p>											
<input type="checkbox"/> *Total of _____ forms are submitted.											